



Company: PDC Energy

Well: Oster 10-3

API: 05-123-13868

Rig Name: Production / V.E.S.

State/County: Colorado / Weld

Latitude: 40.328, Longitude: -104.869

Directions are relative to True North

VS-Azi: 0.000 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB = Ground Level

DRILLOG GYRO SURVEY CALCULATIONS

Filename: survey.ut

Minimum Curvature Method

Report Date/Time: 3/3/2015 / 20:37

Vaughn Energy Services

Henderson Colorado

303-853-4976

Norman Cowan

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	****
100.000	0.498	216.973	99.999	-0.347	-0.262	-0.347	0.435	216.973	0.498
200.000	0.413	301.517	199.997	-0.507	-0.830	-0.507	0.972	238.605	0.616
300.000	0.482	268.347	299.994	-0.330	-1.558	-0.330	1.592	258.023	0.264
400.000	0.255	296.483	399.992	-0.243	-2.177	-0.243	2.191	263.622	0.284
500.000	0.662	280.673	499.988	-0.037	-2.944	-0.037	2.945	269.277	0.423
600.000	0.406	290.301	599.984	0.193	-3.845	0.193	3.850	272.873	0.270
700.000	0.660	264.180	699.979	0.258	-4.750	0.258	4.757	273.105	0.345
800.000	0.266	280.443	799.976	0.241	-5.552	0.241	5.557	272.490	0.411
900.000	0.292	202.114	899.975	0.047	-5.876	0.047	5.876	270.463	0.353
1000.000	0.313	284.899	999.974	-0.118	-6.236	-0.118	6.237	268.913	0.400
1100.000	0.563	237.394	1099.972	-0.313	-6.914	-0.313	6.921	267.410	0.420
1200.000	0.519	273.270	1199.967	-0.551	-7.780	-0.551	7.799	265.945	0.336
1300.000	0.503	252.275	1299.963	-0.659	-8.650	-0.659	8.675	265.642	0.187
1400.000	0.710	260.279	1399.958	-0.897	-9.679	-0.897	9.720	264.702	0.223
1500.000	0.642	236.545	1499.951	-1.311	-10.757	-1.311	10.837	263.051	0.286
1600.000	0.613	245.334	1599.945	-1.843	-11.711	-1.843	11.855	261.055	0.101
1700.000	0.625	239.595	1699.939	-2.343	-12.667	-2.343	12.882	259.523	0.063
1800.000	0.812	247.265	1799.931	-2.893	-13.792	-2.893	14.092	258.155	0.210
1900.000	0.548	234.098	1899.924	-3.447	-14.833	-3.447	15.229	256.917	0.305
2000.000	0.657	260.905	1999.919	-3.819	-15.787	-3.819	16.242	256.403	0.299
2100.000	0.544	252.822	2099.913	-4.049	-16.806	-4.049	17.287	256.453	0.141
2200.000	0.885	316.369	2199.907	-3.631	-17.792	-3.631	18.159	258.467	0.806
2300.000	1.101	302.052	2299.892	-2.562	-19.139	-2.562	19.310	262.376	0.327
2400.000	0.633	293.504	2399.880	-1.832	-20.460	-1.832	20.542	264.884	0.485
2500.000	0.659	301.939	2499.874	-1.307	-21.454	-1.307	21.494	266.513	0.099
2600.000	1.138	299.910	2599.861	-0.508	-22.803	-0.508	22.809	268.724	0.479
2700.000	0.920	291.036	2699.845	0.275	-24.413	0.275	24.415	270.646	0.269
2800.000	0.984	299.670	2799.831	0.989	-25.909	0.989	25.928	272.185	0.157
2900.000	0.882	280.567	2899.818	1.555	-27.412	1.555	27.456	273.247	0.326
3000.000	1.034	292.286	2999.804	2.038	-29.004	2.038	29.076	274.020	0.247
3100.000	1.148	264.652	3099.787	2.287	-30.836	2.287	30.921	274.242	0.533
3200.000	1.454	251.543	3199.761	1.792	-33.037	1.792	33.085	273.105	0.425
3300.000	1.380	256.100	3299.731	1.101	-35.409	1.101	35.427	271.781	0.135
3400.000	1.534	224.192	3399.700	-0.148	-37.512	-0.148	37.512	269.774	0.815

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N-S FT	+E-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
3500.000	1.750	227.801	3499.659	-2.134	-39.576	-2.134	39.634	266.914	0.239
3600.000	1.435	235.898	3599.620	-3.861	-41.744	-3.861	41.923	264.715	0.386
3700.000	1.657	226.641	3699.584	-5.557	-43.833	-5.557	44.184	262.775	0.334
3800.000	1.865	227.901	3799.537	-7.640	-46.092	-7.640	46.721	260.588	0.211
3900.000	1.802	216.623	3899.486	-9.994	-48.237	-9.994	49.262	258.295	0.366
4000.000	1.638	247.263	3999.443	-11.808	-50.494	-11.808	51.856	256.838	0.923
4100.000	1.964	227.157	4099.394	-13.526	-53.069	-13.526	54.765	255.701	0.706
4200.000	1.660	232.471	4199.344	-15.574	-55.474	-15.574	57.619	254.319	0.347
4300.000	1.751	233.813	4299.300	-17.358	-57.855	-17.358	60.403	253.300	0.099
4400.000	1.939	245.875	4399.248	-18.951	-60.632	-18.951	63.525	252.643	0.431
4500.000	1.360	248.241	4499.207	-20.083	-63.279	-20.083	66.389	252.392	0.583
4600.000	1.348	222.757	4599.180	-21.386	-65.179	-21.386	68.598	251.835	0.597
4700.000	1.468	253.088	4699.151	-22.623	-67.204	-22.623	70.909	251.395	0.746
4800.000	1.378	226.747	4799.121	-23.819	-69.306	-23.819	73.285	251.033	0.654
4900.000	1.351	255.762	4899.094	-24.933	-71.324	-24.933	75.556	250.732	0.684
5000.000	0.997	216.109	4999.074	-25.926	-72.979	-25.926	77.447	250.442	0.863
5100.000	1.357	198.344	5099.053	-27.752	-73.864	-27.752	78.905	249.408	0.508
5200.000	1.217	203.479	5199.028	-29.850	-74.660	-29.850	80.406	248.208	0.181
5300.000	1.406	200.123	5299.002	-31.976	-75.505	-31.976	81.997	247.047	0.203
5400.000	1.052	194.339	5398.979	-34.018	-76.155	-34.018	83.407	245.930	0.374
5500.000	1.116	242.637	5498.963	-35.355	-77.247	-35.355	84.953	245.407	0.889
5600.000	1.256	259.661	5598.942	-36.000	-79.190	-36.000	86.989	245.553	0.378
5700.000	1.123	228.916	5698.921	-36.840	-81.007	-36.840	88.991	245.545	0.644
5800.000	1.145	230.224	5798.901	-38.123	-82.513	-38.123	90.894	245.202	0.034
5900.000	0.990	246.739	5898.884	-39.103	-84.074	-39.103	92.722	245.057	0.343
6000.000	1.003	206.087	5998.870	-40.230	-85.252	-40.230	94.268	244.738	0.692
6100.000	0.934	203.310	6098.856	-41.765	-85.959	-41.765	95.568	244.087	0.083
6200.000	1.153	232.389	6198.840	-43.128	-87.079	-43.128	97.174	243.652	0.565
6300.000	1.106	216.657	6298.821	-44.516	-88.453	-44.516	99.023	243.285	0.313
6400.000	0.946	247.941	6398.806	-45.601	-89.794	-45.601	100.709	243.077	0.574
6500.000	0.823	243.206	6498.794	-46.234	-91.200	-46.234	102.250	243.117	0.142
6600.000	0.971	209.056	6598.782	-47.299	-92.253	-47.299	103.672	242.855	0.545
6700.000	1.066	241.447	6698.767	-48.484	-93.482	-48.484	105.307	242.587	0.575
6800.000	1.494	223.248	6798.742	-49.878	-95.192	-49.878	107.468	242.347	0.585
6900.000	1.336	255.568	6898.713	-51.118	-97.214	-51.118	109.835	242.263	0.802
7000.000	1.324	240.762	6998.687	-51.973	-99.352	-51.973	112.125	242.385	0.343
7100.000	1.194	216.325	7098.663	-53.377	-100.977	-53.377	114.217	242.139	0.548
7150.000	0.940	237.761	7148.655	-54.015	-101.632	-54.015	115.095	242.010	0.937

HORIZONTAL DISPLACEMENT IS
115.095 FEET AT 242.010 DEGREES